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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of: ) Date: April 29, 2004  
James A. Salomon ) Attorney Docket No.: F-152  
Serial No.: 09/689,017 ) Customer No.: 00919  
Filed: October 12, 2000 ) Group Art Unit: 2625  
Confirmation No.: 6163 ) Examiner: Seyed H. Azarian  
Title: **METHOD AND SYSTEM FOR PRODUCING ROBUST INDICIA FOR  
DIGITAL PRINTING AND VERIFICATION**

**TRANSMITTAL OF APPEAL BRIEF (PATENT APPLICATION 37 CFR 1.192)**

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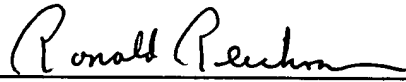
Transmitted herewith in **triplicate** is the **APPEAL BRIEF** in the above-identified patent application with respect to the Notice of Appeal filed on March 19, 2004.

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Respectfully submitted,



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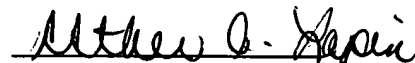
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) Attorney Docket No.: F-152

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*#9/Appeal  
Brief  
may  
5/13/04*

Title: **METHOD AND SYSTEM FOR PRODUCING ROBUST INDICIA  
FOR DIGITAL PRINTING AND VERIFICATION**

**APPELLANT'S BRIEF**

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**Technology Center 2600**

Sir:

This brief is in furtherance of the Notice of Appeal filed in this case on March 19, 2004.

This Brief is transmitted in triplicate.

05/05/2004 WADDELRI 00000105 161885 09689017

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## **I REAL PARTY IN INTEREST**

Pitney Bowes Inc. is the real party in interest.

## **II RELATED APPEALS AND INTERFERENCES**

There are no related Appeals and Interferences.

## **III STATUS OF CLAIMS**

- a) Claims 1 - 15 are in the application.
- b) Claims 1 - 15 are rejected.
- c) Claims 1 - 15 are on appeal.

## **IV STATUS OF AMENDMENTS**

An amendment subsequent to the December 22, 2003, Final Rejection was filed on February 3, 2004. This amendment was not entered.

## **V SUMMARY OF THE INVENTION**

### **A. Background**

The prior art does not provide for a system and method for improving the capture of a symbology region in a postage indicium applied on a mailpiece, when the symbology region may be caused to exhibit a defect associated with the production and/or scanning of the postage indicium, by detecting the changes in error compensation marks in order to compensate for the defect of the symbology region to ensure that the symbology region is being interpreted correctly.

Currently, one can mail a letter or a package through the U.S. Postal Service (hereafter referred to as USPS) using a postage indicium. In using a postage indicium, the sender usually uses a postage meter certified by the USPS (or the government postal service for other countries) to issue a postage indicium according to the weight of the mailpiece, the destination, and the chosen service. The meter will print on the indicium the paid postage amount, the indicium issuance date, location, the meter number, and a postal service symbol. The indicium also carries encryption information, which includes the postage amount and other postal data that relate to the mailpiece and the postage meter that prints the indicium. The encrypted information, which is usually referred to as a digital token or a digital signature, is used for authentication purposes. The encryption is also used to protect the integrity of information, including the postage amount, imprinted on the mailpiece for later verification of postage payment. Since the digital token incorporates encrypted information relating to evidencing of postage payment, altering the printed information in an indicium is detectable by standard verification procedures. Examples of systems that are capable of generating and printing such indicia are described in U.S. Patent Numbers 4,725,718, 4,757,537, 4,775,246 and 4,873,645, each assigned to the assignee of the present invention.

It is preferable to include in the indicium a plurality of alphanumerical characters which can be read by an Optical Character Recognition (OCR) device and by an operator. The use of such OCR characters on an indicium has the combined advantage of human readability and machine readability. Currently, postage indicia and OCR characters can be printed by the sender using an inkjet printer, a thermal transfer print

head or another personal printer. The print head of an inkjet printer typically has one or more rows of nozzles to simultaneously push out a plurality of ink droplets to form a corresponding number of rows of pixels. Under normal circumstances, when the velocity of the mailpiece relative to the print head is constant, the print head can produce row after row of pixels on the mailpiece in a rectangular matrix formation, with each row being substantially perpendicular to the traveling direction of the mailpiece, and the pitch between pixel rows also being constant. If the velocity of the mailpiece is not constant, the pitch between the pixel rows may vary. Under unusual circumstances, the pixel rows may be caused to become skewed in one direction or another. Consequently, the image produced by the printer may become distorted. For example, a vertical line may become angled, and a rectangle may be printed as a non-orthogonal quadrilateral.

An OCR reader usually uses a linear optical scanning device to scan in the printed image. An OCR engine uses some sort of pattern matching algorithm to interpret the scanned-in image. If the OCR character region in an indicium is distorted when it is printed or when it is captured by the OCR reader, there is a possibility that the characters in that region may not be interpreted correctly. Therefore, it is desirable and advantageous to provide a method for improving the capture of an OCR character and/or other symbology region in an indicium on a mailpiece, so that the distortion in the OCR character and/or other symbology region can be detected to ensure that the symbols or OCR characters, as scanned in by optical scanner, are interpreted correctly.

**B. Appellant claims a system and method for improving the capture of a symbology region in a postage indicium applied on a mailpiece, when the symbology region may be caused to exhibit a defect associated with the production and/or scanning of the postage indicium, by detecting the changes in error compensation marks in order to compensate for the defect of the symbology region to ensure that the symbology region is being interpreted correctly.**

It is the primary objective of the present invention to reduce the errors in interpreting OCR characters in an OCR character and/or other symbology region of a postage indicium applied on a mailpiece, wherein the symbology or OCR character region may be caused to exhibit a defect associated with the production of the postage indicium or with the reading of the postage indicium. Accordingly, the first aspect of the present invention is to provide a method for improving the capture of the symbology or OCR character region. The method includes the steps of providing one or more error compensation marks in the proximity of the symbology or OCR character region such that the error compensation marks are caused to exhibit changes indicative of the defect of the symbology or OCR character region and detecting the changes in the error compensation marks to compensate for the defect of the symbology or OCR character region.

Preferably, the error compensation marks include a plurality of timing marks to identify the defect of the symbology or OCR character region caused by irregularities in the transport of the mailpiece through the indicium printing device, relative to the timing signal used by the printing device.



When a postage indicium is printed with a print head, it is preferable that the error compensation marks include a plurality of graphical images in order to identify the defect of the symbology or OCR character region caused by irregularities in the print head. These irregularities include misdirected jets, loss of jets, and so forth.

FIG. 1

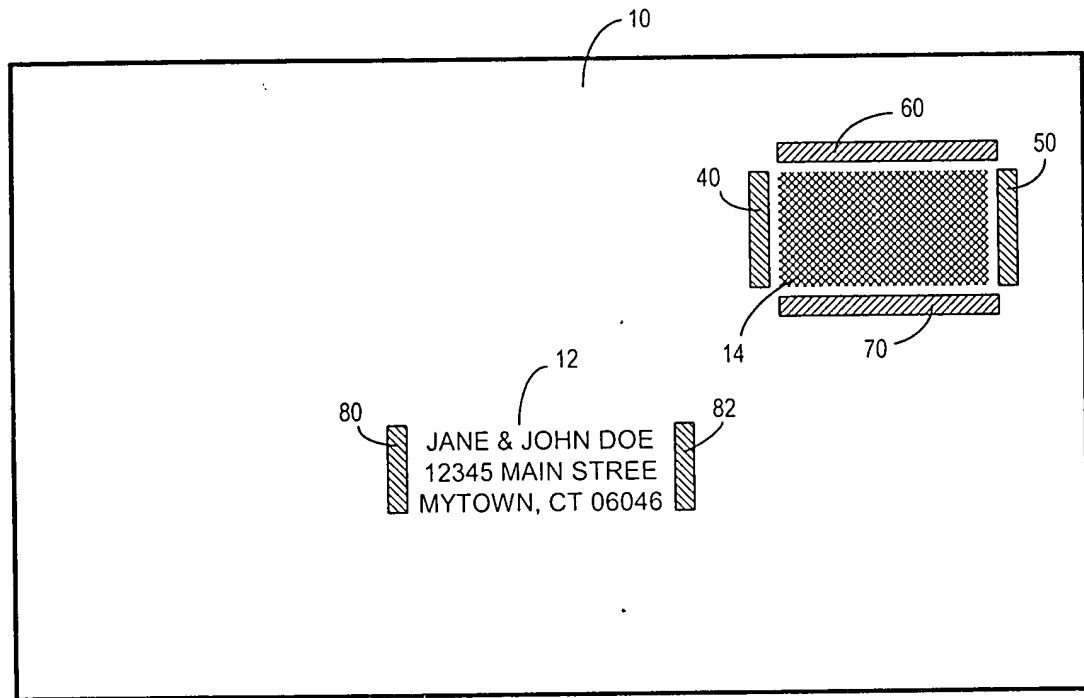


Fig. 1 illustrates a mailpiece 10 having a destination address 12 and an indicium 14 printed thereon. It should be noted that the indicium 14 shown in Figure 1 includes an OCR character region 16 (see Figure 2). The OCR character region 16 advantageously provides alphanumerical characters which can be read by an OCR reader. However, if the OCR characters are distorted or damaged when they are produced or when they are read in by an OCR reader, they may be interpreted incorrectly by the OCR reader. Thus, it is preferable to place a plurality of error compensation marks 40, 50, 60 and 70 in the proximity of the OCR character region 16 to detect the defects on the indicium 14, especially in the OCR character region 16.

Furthermore, it is also possible to provide additional error compensation marks 80 and 82 in the proximity of the destination address 12 to help ensure that the destination address 12 is read correctly by a device.

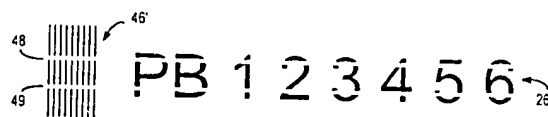
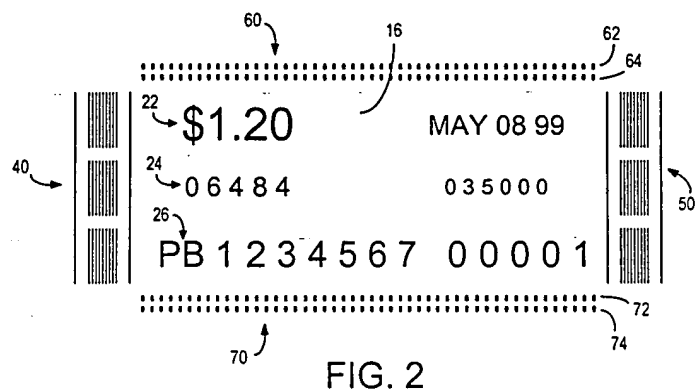


FIG. 3

As shown in Figure 2, the error compensation marks 40 and 50 include a plurality of graphic elements especially designed to detect the defects caused by the inkjet nozzles of an inkjet printer print-head (not shown). In particular, the error compensation mark 40 includes a group of ladder images 42, 44 and 46 to be associated, respectively, with the character rows 22, 24 and 26 in the OCR character region 16. Additionally, the error compensation mark 60 includes two rows of timing marks 62 and 64, while the error compensation mark 70 includes two rows of timing marks 72 and 74. The timing marks are designed to detect the defects caused mainly by the irregularities in the transport of the mailpiece through the inkjet printer. It should be noted that the characters within the OCR character region 16 in an indicium 14 may vary from one mailpiece to another, and there are many different types of defects or distortions that may appear on an OCR character. Thus, it is difficult to design an algorithm to detect the differences between a character in its normal form and the same character in one of the many distorted forms. For example, each of the OCR characters in the character

the many distorted forms. For example, each of the OCR characters in the character row 26' contains some defects, as shown in Figure 3. While the defective characters may be easily recognizable by an operator, they may be interpreted incorrectly by a machine. In contrast, error compensation marks can be made of fixed patterns printed at fixed locations so that any changes in the patterns can be easily detected. For example, one could simply store the fixed patterns in a database and use these stored patterns as templates for comparison with the scanned-in patterns. As shown in Figure 3, the ladder image 46' has two blank strips 48 and 49. When the ladder image 46' and a normal ladder image 46 are compared, it can be recognized that the problem is missing ink droplets, probably caused by a blockage in the inkjet nozzles. Accordingly, the defective characters in the character row 26' can be recognized by an error detection and correction algorithm.

## **VI ISSUES PRESENTED FOR REVIEW**

- A. Whether or not claims 1, 2 and 7 are patentable under 35 USC 103(a) over Moore (U.S. Patent No. 5,917,925) in view of Baker, et al. (U.S. Patent No. 5,862,243).
- B. Whether or not claim 3 is patentable under 35 USC 103(a) over Moore (U.S. Patent No. 5,917,925) in view of Baker, et al. (U.S. Patent No. 5,862,243).
- C. Whether or not claim 4 is patentable under 35 USC 103(a) over Moore (U.S. Patent No. 5,917,925) in view of Baker, et al. (U.S. Patent No. 5,862,243).

- D. Whether or not claim 5 is patentable under 35 USC 103(a) over Moore (U.S. Patent No. 5,917,925) in view of Baker, et al. (U.S. Patent No. 5,862,243).
- E. Whether or not claim 6 is patentable under 35 USC 103(a) over Moore (U.S. Patent No. 5,917,925) in view of Baker, et al. (U.S. Patent No. 5,862,243).
- F. Whether or not claims 8 and 9 are patentable under 35 USC 103(a) over Moore (U.S. Patent No. 5,917,925) in view of Baker, et al. (U.S. Patent No. 5,862,243).
- G. Whether or not claims 10 - 15 are patentable under 35 USC 103(a) over Moore (U.S. Patent No. 5,917,925) in view of Baker, et al. (U.S. Patent No. 5,862,243).

## **VII GROUPING OF CLAIMS**

- A. Claims 1, 2 and 7 stand or fall together with regards to the rejection under 35 USC §103(a).
- B. Claim 3 stands or falls with regards to the rejection under 35 USC §103(a).
- C. Claim 4 stands or falls with regards to the rejection under 35 USC §103(a).
- D. Claim 5 stands or falls with regards to the rejection under 35 USC §103(a).
- E. Claim 6 stands or falls with regards to the rejection under 35 USC §103(a).
- F. Claims 8 and 9 stand or fall together with regards to the rejection under 35 USC §103(a).

- G. Claims 10 - 15 stand or fall together with regards to the rejection under 35 USC §103(a).

## VIII ARGUMENTS

- A. Claims 1, 2 and 7 have been rejected by the Examiner under 35 USC 103(a) as being unpatentable over Moore (U.S. Patent No. 5,917,925) in view of Baker, et al. (U.S. Patent No. 5,862,243).

Moore discloses the following in column 12, lines 5-19:

"From this point forward, marked mailpieces can be identified and verified through the use of the field reader system **18**. Typically, a plurality of field readers cooperate with a single host computer **14** and with the control computer **12**, and are at locations remote from the host and control computers. It should be understood that the mailpieces can be marked directly, or that one or more fixtures can be marked and affixed permanently to the mailpieces. The mailpiece items are identified and verified by using a light of appropriate wavelength to illuminate the symbol on the items. The illuminated symbol is captured by the camera **29**. The captured image is then transferred to the portable PC **22** where the data is enhanced (if necessary), compressed, and transmitted via a modem **26**, cellular link, or satellite communication to the host computer **14**."

Moore discloses the following in column 23, lines 32-42:

"After the mailpiece package module has received its indicia marking from the marker, the module is scanned by a reader to confirm a valid marking. A camera is positioned to verify that a readable print has been made and that the information conveying positions of the symbols are readable."

The camera is preferably a charge couple device (CCD) camera. It is a black and white television camera with a solid state image center. However, any detection means capable of capturing the image is envisioned by the present disclosure."

Moore discloses the following in column 11, line 63 - column 12, line 5:

“Once the print cycle begins, a CCD camera **28** mounted downstream from the printer in the marking process maintains a continuous validation that an appropriate indicia symbol is being printed onto the product. If the printed symbol is different from that provided by the marker CPU **27**, an error signal is activated to alert the operator. At the conclusion of the marking cycle, the printer CPU uploads a print count to the host. The postal service or the vendor can conduct electronic audits of all host computers at any time.”

Baker, et al. discloses the following in column 2, lines 6-13:

“In still another feature of the present invention, a barcode evaluation method for mail is provided which includes feeding an ail piece to an imaging devide (sic) for evaluation and generating an image of a barcode on the mail piece. A processor is used to evalate (sic) the image and identify a barcode defect. A defect state is determined. The evaluation results are printed with an image of the barcode and a marker indicating the determined defect state.”

Neither Moore nor Baker, taken separately or together, discloses or anticipates step b of claim 1, namely, detecting the changes in the error compensation marks in order to compensate for the defect of the symbology region to ensure that the symbology region is being interpreted correctly. Appellant detects the defect of error compensation marks 40, 50, 60 and 70, which are illustrated in Appellant's Fig. 1 to insure that the symbology region is being interpreted correctly.

Notwithstanding the foregoing, in rejecting a claim under 35 U.S.C. §103, the Examiner is charged with the initial burden for providing a factual basis to support the obviousness conclusion. *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967); *in re Lunsford*, 375 F.2d 385, 148 USPQ 721 (CCPA 1966); *in re Freed*, 425 F.2d 785, 165 USPQ 570 (CCPA 1970). The Examiner is also required to explain how and why one having ordinary skill in the art would have been led to modify an applied

reference and/or combine applied references to arrive at the claimed invention. *In re Ochiai*, 37 USPQ2d 1127 (Fed. Cir. 1995); *in re Deuel*, 51 F.3d 1552, 34 USPQ 1210 (Fed. Cir. 1995); *in re Fritch*, 972 F.2d 1260, 23 USPQ 1780 (Fed. Cir. 1992); *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988). In establishing the requisite motivation, it has been consistently held that both the suggestion and reasonable expectation of success must stem from the prior art itself, as a whole. *In re Ochiai*, *supra*; *in re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); *in re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *in re Dow Chemical Co.*, 837 F.2d 469, 5 USPQ2d 1529 (Fed. Cir. 1988).

**B. Claim 3 has been rejected by the Examiner under 35 USC 103(a) as being unpatentable over Moore (U.S. Patent No. 5,917,925) in view of Baker, et al. (U.S. Patent No. 5,862,243).**

In addition to the arguments made in above Section A, please consider the following. Claim 3 adds the following to the method claimed in claim 2, wherein the error compensation marks include a plurality of timing marks for identifying the defect of the OCR character region caused by irregularities in transport of the mailpiece through the indicium printing device.

Regarding claim 3, Moore does not disclose or anticipate a plurality of timing marks 62, 64, 72, and 74 which is illustrated in Appellant's Fig. 4 for identifying the defect of the OCR character region caused by irregularities in transport of the mailpiece through the indicium printing device. In column 11, line 63 to column 12, line 5, Moore uses an error signal to alert the operator. Moore's error signal does not identify defects

of the OCR character region caused by irregularities in transport of the mailpiece through the indicium printing device.

**C. Claim 4 has been rejected by the Examiner under 35 USC 103(a) as being unpatentable over Moore (U.S. Patent No. 5,917,925) in view of Baker, et al. (U.S. Patent No. 5,862,243).**

In addition to the arguments made in above Section A, please consider the following. Claim 4 adds the following to the method claimed in claim 3, wherein the irregularities are the result of a mismatch between transport velocity for transporting the mailpiece and timing signals of the printing device.

Moore discloses the following in column 14, line 64 through column 15, line 9:

“When the host computer **14** contacts the marker **CPU 27** at the printer location, the first step is to establish a coded communication. Once the protocol for the coded communication is set, the printer location enigma card continually monitors either every print or some block of marks created and imprinted at the printer location. The printer location enigma card tracks the number of marks against the allotment from the host computer **14**. When the enigma card detects that the allocation of marks for the specified period of time has been exhausted by the printer, then the printer location enigma card immediately prevents additional marking. The printer can no longer operate without authorization from the host computer enigma card to the printer location enigma card.”

The Examiner regards the foregoing as rendering claim 4 unpatentable. The foregoing tracks the number of marks against the allotment from the host computer; it does not disclose or anticipate irregularities in the transport of a mailpiece that result from a mismatch between the transport velocity for transporting the mailpiece and timing signals of the printing device.



**D. Claim 5 has been rejected by the Examiner under 35 USC 103(a) as being unpatentable over Moore (U.S. Patent No. 5,917,925) in view of Baker, et al. (U.S. Patent No. 5,862,243).**

In addition to the arguments made in above Section A, please consider the following. Claim 5 adds the following to the method claimed in claim 3, wherein the print device includes a print head having a plurality of inkjet nozzles, and wherein the irregularities are the result of a misalignment of the transport mechanism with the print head, causing the inkjet nozzles to appear skewed relative to a transport direction of the transport mechanism.

The Examiner stated in page 4 of the Final Rejection: "Regarding claim 5, Moore discloses the method, wherein the print device includes a print head having a plurality of inkjet nozzles, and wherein the irregularities are the result of a misalignment of the transport mechanism with the print head, causing the inkjet nozzles to appear skewed relative to a transport direction of the transport mechanism (column 21 lines 1-11, indicia marks to the mail pieces uses a typical inkjet printer). "

Column 21 lines 1-11 of Moore, read as follows:

"One preferred procedure for applying the indicia marks to the mailpieces uses a typical ink jet printer which directs a spray of a chemical formulation onto the modules. The chemical formulation can be an ink or similar composition that can be applied in a predetermined pattern to the modules or, alternately, to the packaged goods. As applied, it is formed into a specific pattern representing either encoded data or raw data. The pattern can be in accordance with the UPC symbols or the like."

The foregoing does not disclose or anticipate irregularities that are the result of a misalignment of the transport mechanism with the print head, causing the inkjet nozzle to appear skewed relative to a transport direction of the transport mechanism.

**E. Claim 6 has been rejected by the Examiner under 35 USC 103(a) as being unpatentable over Moore (U.S. Patent No. 5,917,925) in view of Baker, et al. (U.S. Patent No. 5,862,243).**

In addition to the arguments made in above Section A, please consider the following. Claim 6 adds the following to the method claimed in claim 3, wherein the irregularities are the result of an uneven surface section of the mailpiece.

The Examiner stated in page 5 of the Final Rejection: "Regarding claim 6, Moore discloses the method, wherein the irregularities are the result of an uneven surface section of the mail piece (column 13, lines 11-19, result of marking the mail pieces can be scanned."

Column 13, lines 11-19 of Moore, read as follows:

"Following the placement of the mark by the marker **20**, a verification of the imprinted mark is conducted by the camera **29** which compares the mark as imprinted with the mark directed by the printer **PC**. As a result of this marking, the mailpieces can be scanned by a field reader **18** to determine the presence of authentic marks. Once the reader has captured the data from the scanned mark, communication is established by the reader with the host computer **14** and the control computer **12**."

The foregoing section of Moore does not disclose or anticipate anything about irregularities that are the result of an uneven surface section of the mailpiece.

**F. Claims 8 and 9 have been rejected by the Examiner under 35 USC 103(a) as being unpatentable over Moore (U.S. Patent No. 5,917,925) in view of Baker, et al. (U.S. Patent No. 5,862,243).**

In addition to the arguments made in above Section A, please consider the following. Claim 8 adds the following to the method claimed in claim 1, wherein the postage indicium producing device is an inkjet printer having at least one row of inkjet nozzles to apply ink droplets onto the mailpiece, wherein the irregularities in the indicium producing device are related to missing ink droplets applied by the inkjet nozzles.

Claim 9 adds the following to the method claimed in claim 1, wherein the postage indicium producing device is an inkjet printer having a plurality of inkjet nozzles to apply ink droplets onto the mailpiece, wherein the irregularities in the indicium producing device are related to blockage of one or more inkjet nozzles.

The Examiner stated in page 6 of the Final Rejection: "Regarding claims 8 and 9, recite similar limitations as claim 5 and is similarly analyzed."

Regarding claims 8 and 9, Moore does not disclose or anticipate an inkjet printer that has at least one row of inkjet nozzle. to apply ink droplets onto the mailpiece, wherein the irregularities in the indicium producing device are related to ink droplets applied by the inkjet nozzles, or are related to blockages of one or more inkjet nozzles.

**G. Claims 10 - 15 have been rejected by the Examiner under 35 USC 103(a) as being unpatentable over Moore (U.S. Patent No. 5,917,925) in view of Baker, et al. (U.S. Patent No. 5,862,243).**

In addition to the arguments made in above Section A, please consider the following. Regarding claim 10, neither Moore nor Baker, et al., taken separately or together, discloses or anticipates step (d) of claim 10, namely, having a fourth mechanism, responsive to the signal, for compensating for the defect in the symbology, according to the detected changes in the error compensation marks.

**IX PRAYER FOR RELIEF**

Appellant respectfully submits that appealed claims 1 - 15 in this application are patentable. It is requested that the Board of Appeal overrule the Examiner and direct allowance of the rejected claims.

Respectfully submitted,



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## **X APPENDIX OF CLAIMS INVOLVED IN THE APPEAL**

### **What is claimed is:**

1. (currently amended) A method for improving capture of a symbology region in a postage indicium applied on a mailpiece, wherein the symbology region may be caused to exhibit a defect associated with the production and/or scanning of the postage indicium, said method comprising the steps of:

(a) providing one or more error compensation marks in the proximity of the symbology region such that the error compensation marks are caused to exhibit changes indicative of the defect of the symbology region, and

(b) detecting the changes in the error compensation marks in order to compensate for the defect of the symbology region to ensure that the symbology region is being interpreted correctly.

2. (original) The method of claim 1, wherein the symbology region includes an OCR character region.

3. (original) The method of claim 2, wherein the error compensation marks include a plurality of timing marks for identifying the defect of the OCR character region caused by irregularities in transport of the mailpiece through the indicium printing device.

4. (original) The method of claim 3, wherein the irregularities are the result of a mismatch between transport velocity for transporting the mailpiece and timing signals of the printing device.

5. (original) The method of claim 3, wherein the print device includes a print head having a plurality of inkjet nozzles, and wherein the irregularities are the result of a misalignment of the transport mechanism with the print head, causing the inkjet nozzles to appear skewed relative to a transport direction of the transport mechanism.

6. (original) The method of claim 3, wherein the irregularities are the result of an uneven surface section of the mailpiece.

7. (original) The method of claim 2, wherein the error compensation marks include at least one graphic image for identifying the defect of the OCR character region caused by irregularities in the postage indicium producing device.

8. (original) The method of claim 1, wherein the postage indicium producing device is an inkjet printer having at least one row of inkjet nozzles to apply ink droplets onto the mailpiece, wherein the irregularities in the indicium producing device are related to missing ink droplets applied by the inkjet nozzles.

9. (original) The method of claim 1, wherein the postage indicium producing device is an inkjet printer having a plurality of inkjet nozzles to apply ink droplets onto the mailpiece, wherein the irregularities in the indicium producing device are related to blockage of one or more inkjet nozzles.

10. (original) A system for improving capture of a symbology region in a postage indicium applied on a mailpiece, wherein the symbology region includes symbols which may be caused to exhibit a defect associated with the production and/or scanning of the postage indicium, said system comprising:

(a) a first mechanism, responsive to the mailpiece, for generating and providing one or more error compensation marks in the proximity of the symbology region, wherein the error compensate marks can be caused to exhibit changes indicative of the defect in the symbology region;

(b) a second mechanism for reading the error compensation marks and producing data indicative of the error compensation marks;

(c) a third mechanism, responsive to the data, for detecting the changes in the error compensation marks and for providing a signal indicative of the changes; and

(d) a fourth mechanism, responsive to the signal, for compensating for the defect in the symbology, according to the detected changes in the error compensation marks.

11. (original) The system of claim 10, wherein the symbology region includes an OCR character region and the symbols include OCR characters.

12. (original) The system of claim 11, wherein the second mechanism includes an optical scanner and the data includes a scanned image.

13. (original)        The system of claim 12, wherein the third mechanism includes an image processing algorithm to compare the scanned image with a fixed set of graphical information in order to detect changes in the error compensation marks.

14. (original)        The system of claim 12, further comprising an OCR reader, operatively connected to the optical scanner, for recognizing the OCR characters.

15. (original)        The system of claim 14, wherein the OCR reader is operatively connected to the third mechanism to compensate for the defect in the OCR characters, according to the detected changes in the error compensation marks.

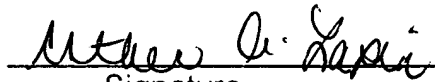


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